UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,966	01/20/2004	Dong Uk Min	007937.P010	4031

8791   7590   09/27/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER
CUTLER, ALBERT H

ART UNIT	PAPER NUMBER
2622	

MAIL DATE	DELIVERY MODE
09/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/761,966	MIN ET AL.
		Examiner	Art Unit
		Albert H. Cutler	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after t he mailing date of this com munication, even if timely filed, may re duce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 July 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 and 8-13</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 and 8-13</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☑ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is responsive to communication filed on July 23, 2007. Claims

2-7 and 14-16 have been cancelled by the Applicant. Claims 1 and 8-13 are pending in

the application and have been examined by the Examiner.

Response to Arguments

2.   Applicant's arguments with respect to claims 1 and 8-13 have been considered

but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hwang(US

2001/0009439).

Consider claim 1, Hwang teaches:

A mobile terminal(See paragraphs 0110-0112, figure 1. The camera can

comprise a wireless communication unit. Therefore, it can function as a mobile

terminal.) having a PC camera function(paragraph 0027), comprising:

an image sensor(102) for obtaining an image(paragraph 0027);

an image digital processing (DSP) unit(103) for formatting the image into specific

image format data(The DSP(103) can compress the image data(i.e. format the image

into specific image format data) and store the compressed data in memory, paragraph

0027.);

a memory unit(107) for storing the specific image format data(paragraph 0027);

an USB interface(104) for connecting with a personal computer(105) through

USB lines having a plurality of paths(See paragraph 0027. The USB interface transmits

image-processed digital signals to a host computer in video conference mode(i.e. has

second path), and transmits compressed data stored in memory to the host computer in

a still image transmission mode(i.e. has a first path). See figure 1. The path from the

memory(107) through the DSP(103) and USB interface(104) constitutes a first path, and

the path from the photographing unit(102) through the DSP(103) and USB

interface(104) constitutes a second path.);

a first switch for allowing the data stored in the memory to be transmitted to the

personal computer through a first path of the USB lines(See paragraphs 0042-0044. A

control unit(108) controls the image processing unit(103) to transmit compressed image

data from memory(i.e. through a first path) to the USB interface(140). By enabling the

DSP to transmit data from the memory the control unit(108) performs a first switching

function.);

a second switch for allowing the specific image format data to be transmitted to

the personal computer through a second path of the USB lines(See paragraphs 0032-

0034. A control unit(108) controls the image processing unit(103) to transmit the image-

processed signal(i.e. specific format data) from the photographing unit(i.e. through a

second path) to the USB interface(140). By enabling the DSP to transmit data directly

from the photographing unit, the control unit(108) performs a second switching

function.); and

a control unit(108) for generating control signals controlling the first switch and

the second switch(See above rationale, paragraphs 0032-0034 and 0042-0044.).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
      obviousness or nonobviousness.

7.   Claims 8-10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hwang(US 2001/0009439) in view of Kirani et al.(US 2002/0032027).

Consider claim 8, and as applied to claim 1 above, Hwang teaches of an image

DSP(103), and of a control unit for controlling the transmission of image data over first

and second paths by controlling of a control unit(see claim 1 rationale). Hwang also

teaches that the image DSP(103) compresses image data(paragraph 0027). However,

Hwang does not explicitly teach the specific components of the image DSP.

Kirani et al. are similar to Hwang in that Kirani et al. teach of a method of

transmitting image data from a digital camera with wireless capability(paragraph 0003).

Kirani et al. also similarly teach of an image DSP(see paragraph 0120, figure 3A).

However, in addition to the teachings of Hwang, Kirani et al. teach that the image

DSP contains a YUV data processing portion(315, figure 3A) for generating YUV data

based on the image received from the image sensor(paragraph 0122);

an image parallel processing portion for receiving the image data and generating

preview image data based on the image data(An image preview can be viewed on a

direct view display(109, figure 1A, paragraphs 0091-0093).);

and an encoding unit(317, figure 3A) for encoding the YUV data(paragraph

0123), generating encoded data(i.e. JPEG data, paragraph 0123), and transmitting the

encoded data("Wire-based transfer to target platform", figure 3A).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time of the invention to include a YUV processing portion, preview image parallel

processing portion, and encoding unit as taught by Kirani et al. in the image DSP taught

by Hwang for the benefit of better matching color expected by the human eye(Kirani et

al., paragraph 0122), providing real-time visual feedback to the user(Kirani et al.,

paragraph 0091), and eliminating image information least significant to the human eye(Kirani et al., paragraph 0123).

Although Kirani et al. teach of an image parallel processing portion for receiving image data and generating a preview image(see above rationale), the combination of Hwang and Kirani et al. does not explicitly teach that the preview data generated is YUV image data.

However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and advantages of generating preview images for a digital camera in a YUV color-space are well known and expected in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to generate the preview images taught by the combination of Hwang and Kirani et al. based on the YUV image data for the benefit that no additional processing would be required, saving on processing time and battery power.

Consider claim 9, and as applied to claim 8 above, Hwang does not explicitly teach that the encoding unit includes a JPEG codec.

Kirani et al. teach that the encoding unit includes a JPEG codec(paragraph 0123).

Consider claim 10, and as applied to claim 8 above, Kirani et al. teach of an. encoding unit for encoding YUV data obtained by a camera(see claim 8 rationale). Hwang teaches that video data(i.e. video conference data) is transmitted through the

second path(paragraphs 0027 and 0033-0035). However, the combination of Hwang

and Kirani et al. does not explicitly teach that the encoding unit includes a MPEG codec.

However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and

advantages of using an MPEG codec to compress video data during video-conferencing

are well known and expected in the art. It would have been obvious to a person having

ordinary skill in the art at the time of the invention to use an MPEG codec to transmit the

video data taught by the combination of Kirani et al. and Hwang for the benefit that

MPEG is a widely used compression technique that produces image data that can be

readily decoded by a host PC, decreases the amount of data to be transmitted, and thus

speeds up transmission time and allows for a higher frame-rate.

Consider claim 12, Hwang teaches:

A method for performing a PC camera function in a mobile terminal(paragraphs

0027-0046), comprising the steps of:

a) connecting with a personal computer(105) through USB lines(104) having a

plurality of paths(See paragraph 0027. The USB interface transmits image-processed

digital signals to a host computer in video conference mode(i.e. has second path), and

transmits compressed data stored in memory to the host computer in a still image

transmission mode(i.e. has a first path). See figure 1. The path from the memory(107)

through the DSP(103) and USB interface(104) constitutes a first path, and the path from

the photographing unit(102) through the DSP(103) and USB interface(104) constitutes a

second path.);

b) generating a transmission control signal according to a kind of transmission data to be transmitted to the personal computer(Transmission control signals are generated according to whether video conference data or still image data is to transmitted; paragraphs 0027, 0033-0035 and 0042-0045.);

c) if the transmission data is data stored in a memory of the mobile terminal, transmitting the data through a first path of the USB lines to the personal computer based on a PC link signal(See paragraphs 0042-0044. A control unit(108) controls the image processing unit(103) to transmit compressed image data from memory(i.e. through a first path) to the USB interface(140). By enabling the DSP to transmit data from the memory, the control unit(108) performs a first switching function based on a PC link signal.); and

d) if the transmission data is image data captured in an image sensor, transmitting the data to the personal computer through a second path of the USB lines based on a PC camera signal(See paragraphs 0032-0034. A control unit(108) controls the image processing unit(103) to transmit the image-processed signal(i.e. specific format data) from the photographing unit(i.e. through a second path) to the USB interface(140). By enabling the DSP to transmit data directly from the photographing unit, the control unit(108) performs a second switching function based on a PC camera signal.).

However, Hwang does not explicitly teach of converting the image data to YUV data or encoding the YUV data to generate encoded data.

Kirani et al. are similar to Hwang in that Kirani et al. teach of a method of transmitting image data from a digital camera with wireless capability(paragraph 0003). Kirani et al. also similarly teach of an image DSP(see paragraph 0120, figure 3A).

However, in addition to the teachings of Hwang, Kirani et al. teach that the image DSP contains a YUV data processing portion(315, figure 3A) for generating YUV data based on the image received from the image sensor(paragraph 0122), and an encoding unit(317, figure 3A) for encoding the YUV data(paragraph 0123), generating encoded data(i.e. JPEG data, paragraph 0123), and transmitting the encoded data("Wire-based transfer to target platform", figure 3A).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a YUV processing portion and encoding unit as taught by Kirani et al. in the image DSP taught by Hwang for the benefit of better matching color expected by the human eye(Kirani et al., paragraph 0122), and eliminating image information least significant to the human eye(Kirani et al., paragraph 0123).

Consider claim 13, and as applied to claim 12 above, Hwang does not explicitly teach that YUV is displayed on a display unit. However, Kirani et al. teach of an image parallel processing portion for receiving the image data and generating preview image data based on the image data(An image preview can be viewed on a direct view display(109, figure 1A, paragraphs 0091-0093).);

The combination of Hwang and Kirani et al. does not explicitly teach that the preview data generated is YUV image data.

However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and advantages of generating preview images for a digital camera in a YUV color-space are well known and expected in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to generate the preview images taught by the combination of Hwang and Kirani et al. based on the YUV image data for the benefit that no additional processing would be required, saving on processing time and battery power.

8.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang in view of Chen(US 6,647,254).

Consider claim 11 and as applied to claim 1 above, Hwang teaches of performing video-conferencing by transmitting frames obtained by the photographing unit(102) to a host computer(105), paragraphs 0027, and 0033-0035. This video-conferencing involves image processing by a DSP(103), paragraph 0034. Therefore, because the processed image data obtained from the DSP(103) is transmitted on a frame by frame basis(paragraph 0034) in order to produce video images, the DSP unit must include a basic clock generation unit for generating a basic clock.

However, Hwang does not explicitly teach that the DSP unit includes a phase locked loop (PLL) for generating a USB clock for the interface unit.

Chen is similar to Hwang in that Chen uses USB(1, figure 1), and radio

circuitry(column 1, lines 6-15). Chen is also concerned with the interaction between

computers and peripheral devices, similar to Hwang(see column 1, lines 6-15).

Furthermore, Chen likewise deals with digital cameras and voice transmission(column

1, lines 16-28), analogous to the video-conferencing of Hwang.

In addition to the teachings of Hwang, Chen teaches of using a phase locked

loop(31, figure 1) for generating a USB clock for an interface(column 2, lines 21-36).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time of the invention to include a phase locked loop for generating a USB clock

for an interface as taught by Chen in the DSP unit taught by Hwang because USB is a

future standard interface for serially connecting peripheral devices so that users may

conveniently expand the equipment of a multimedia computer(Chen, column 1, lines 33-

37), and a phase lock loop allows synchronization between a USB port and an interface,

and control over frequency modulation based on a USB clock(Chen, column 2, lines 25-

29).

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Cooper et al.(US 2004/0017477) teach of displaying YUV data

obtained by a camera on a display so as to reduce operational overhead and increase

operational functionality(paragraphs 0035 and 0042).

10.   Any objections made by the Examiner to the specification and claims are hereby

withdrawn in view of Applicant's response.

11.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-

1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER